

ABSTRACT OF THE DISCLOSURE

The present invention aims to provide a magnetic sensor provided with a magnetoresistive effect element capable of stably maintaining a direction of magnetization in a magnetic domain of a free layer.

The magnetic sensor includes a magnetoresistive effect element provided with narrow zonal portions 11a 11a including a pinned layer and a free layer. Disposed below both ends of the free layer are bias magnet films 11b 11b composed of a permanent magnet that applies to the free layer a bias magnetic field in a predetermined direction and an initializing coil 31 that is disposed in the vicinity of the free layer and applies to the free layer a magnetic field having the direction same as that of the bias magnetic field by being energized under a predetermined condition. Further, magnetizing the bias magnet films and fixing the direction of magnetization of the pinned layer are performed by a magnetic field formed by a magnet array configured such that plural permanent magnets are arranged on a lattice point of a tetragonal lattice and a polarity of a magnet pole of each permanent magnet is different from a polarity of the other adjacent magnet pole spaced by the shortest route.